

## CLAIMS

1. A catalyst substrate for use with a catalytic converter,  
comprising:  
a catalyst substrate material comprising an inlet, an outlet, an  
opening for the passage of exhaust gas therethrough, and comprising a catalyst  
5 and zirconium phosphate.
2. The catalyst substrate of Claim 1, wherein said zirconium  
phosphate is a layer disposed on at least part of said catalyst substrate material.
3. A catalytic converter, comprising:  
a catalyst substrate comprising a catalyst and zirconium  
phosphate;  
a shell having an opening for the passage of exhaust gas  
5 therethrough, wherein said shell is concentrically disposed around said catalyst  
substrate; and  
a mat support material disposed between said catalyst substrate  
and said shell, and concentrically around said catalyst substrate.
4. The catalytic converter of Claim 3, wherein said  
zirconium phosphate is a layer on at least part of the catalyst substrate.
5. The catalytic converter of Claim 3, further comprising an  
exhaust system component secured to at least one end of said shell.
6. The catalytic converter of Claim 5, wherein said exhaust  
system component is selected from the group consisting of an endcone, an  
endplate, an exhaust manifold assembly, an exhaust pipe, a connecting pipe, a  
mounting flange, and combinations comprising at least one of the foregoing  
5 components.

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7. A method for manufacturing a catalytic converter,  
comprising:  
forming a catalyst substrate comprising a catalyst and zirconium  
phosphate;  
5 disposing concentrically said catalyst substrate in a shell having  
an opening ;  
disposing concentrically a mat support material between said  
catalyst substrate and said shell, and around said catalyst substrate; and  
securing an exhaust system component to at least one end of said  
10 shell.

8. The method of Claim 7, wherein said forming a catalyst  
substrate further comprises applying a layer of zirconium phosphate to said  
catalyst substrate.

9. The method of Claim 8, wherein said applying further  
comprises a method selected from the group consisting of wash coating,  
imbibing, impregnating, physisorbing, chemisorbing, precipitation, dipping, and  
combinations comprising at least one of the foregoing methods.

10. The method of Claim 8, wherein said applying further  
comprises reacting zirconium metal with phosphoric acid to form a solution,  
and dipping said catalyst substrate into said solution.

11. A method for manufacturing a catalyst substrate for use  
with a catalytic converter, comprising:  
forming a catalyst substrate comprising a catalyst; and  
applying zirconium phosphate to said catalyst substrate.

12. The method of Claim 11, wherein said applying further  
comprises applying a layer of zirconium phosphate to said catalyst substrate.

13. The method of Claim 12, wherein said applying further comprises a method selected from the group consisting of wash coating, imbibing, impregnating, physisorbing, chemisorbing, precipitation, dipping, and combinations comprising at least one of the foregoing.

14. The method of Claim 12, wherein said applying further comprises reacting zirconium metal with phosphoric acid to form a solution, and dipping said catalyst substrate into said solution.

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